

PTO/SB/08A (07-05)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known	
		Application Number	10/603,132
		Filing Date	June 24, 2003
		First Named Inventor	James L. McNaughton
		Group Art Unit	1761
		Examiner Name	Arthur L. Corbin
		Attorney Docket Number	SU-7273
Sheet	1	of	6

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	US-254	US-2184888	12-26-1939	Muskat et al.	
	US-255	US-2580808	01-01-1952	Marks et al.	
	US-256	US-2913460	11-17-1959	Brown et al.	
	US-257	US-2929816	03-22-1960	Chamberlain	
	US-258	US-3147254	09-01-1964	Paterson	
	US-259	US-3222276	12-07-1965	Belohlav et al.	
	US-260	US-4770198	09-13-1988	Bergman	
	US-261	US-5209934	05-11-1993	Ekis, et al.	
	US-262	US-5429723	07-04-1995	Atkinson	
	US-263	US-5641520	06-24-1997	Howarth et al.	
	US-264	US-5662940	09-02-1997	Hight et al.	
	US-265	US-5688515	11-18-1997	Kuechler, et al.	
	US-266	US-6069142	05-30-2000	Gaffney, et al.	
	US-267	US-6352725 B1	03-05-2002	Torres et al.	
	US-268	US-6379633 B1	04-30-2002	Garlick	
	US-269	US-6379685 B1	04-30-2002	Richter	
	US-270	US-6423267 B1	07-23-2002	Yang et al.	
	US-271	US-6436444 B1	08-20-2002	Richter	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ - Kind Code ⁵ (if known)				
	FP-43	CN- 1432279	07-30-2003	China Nat. Petroleum Corp.	Abstract Only	
	FP-44	EP- 1080641 A2	03-07-2001	Nalco Chemical Co.		
	FP-45	GB- 644	09-22-1910	Peter		
	FP-46	GB- 1358617	07-03-1974	Alsace Mines Potasse		
	FP-47	RU- 277157	07-22-1970	Scientific Research		

Examiner Signature	Arthur L. Corbin	Date Considered	8-21-06
--------------------	------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of US PTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/603,132		
		Filing Date	June 24, 2003		
		First Named Inventor	James L. McNaughton		
		Group Art Unit	1761		
		Examiner Name	Arthur L. Corbin		
Sheet	2	of	6	Attorney Docket Number	SU-7273

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
<i>AC</i>	US-272	US-6652889 B2	11-25-2003	Moore et al.	
	US-273	US-6908636 B2	06-21-2005	Howarth	
	US-274	US-6986910 B2	07-17-2006	Howarth	
	US-275	US-2002/0192110 A1	12-19-2002	Garlick	
	US-276	US-2003/0077365 A1	04-23-2003	Howarth	
	US-277	US-2003/0100254 A1	05-29-2003	Iwai	
	US-278	US-2003/0102271 A1	06-05-2003	Howarth et al.	
	US-279	US-2003/0113402 A1	06-19-2003	Howarth et al.	
	US-280	US-2004/0010024 A1	01-15-2004	Howarth	
	US-281	US-2004/0039353 A1	02-26-2004	Koenig et al.	
<i>AC</i>	US-282	US-2004/0166136 A1	08-26-2004	Morelli et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ - Kind Code ⁵ (if known)				
<i>AC</i>	FP-48	WO- 93/04987 A1	03-18-1993	Monsanto Co.		
	FP-49	WO- 96/14092 A1	05-17-1996	W.R. Grace & Co.		
	FP-50	WO- 96/30562 A1	10-03-1996	Electrocatalytic, Inc.		
	FP-51	WO- 97/33567 A1	09-18-1997	Tri Link Unlimited Ltd.		
	FP-52	WO- 97/43215 A1	11-20-1997	Bio Lab, Inc.		
	FP-53	WO- 01/35745 A1	05-25-2001	Albemarle Corporation		
	FP-54	WO- 01/52656 A2	07-26-2001	Albemarle Corporation		
	FP-55	WO-01/53215 A1	07-26-2001	Albemarle Corporation		
	FP-56	WO- 02/062141 A1	08-15-2002	Albemarle Corporation		
	FP-57	WO 03/011033 A1	02-13-2003	Solution Biosciences, Inc.		
<i>AC</i>	FP-58	WO 04/57966 A1	07-15-2004	Solution Biosciences Inc.		

Examiner Signature	<i>Arthur L. Corbin</i>	Date Considered	<i>8-21-06</i>
--------------------	-------------------------	-----------------	----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of US PTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	10/603,132
				Filing Date	June 24, 2003
				First Named Inventor	James L. McNaughton
				Art Unit	1761
				Examiner Name	Arthur L. Corbin
Sheet	3	of	6	Attorney Docket Number	SU-7273

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>mc</i>	L-131	Affidavit of Shunong Yang, William F. McCoy and Anthony W. Dallmier Under 37 C.F.R. §1.13; presumably made public on Sept. 11, 2001, 13-pages. This Affidavit is contained in the File Wrapper of US Application No. 09/518,435 now US 6,287,473, issued Sept. 11, 2001.	
	L-132	Beihoffer, Jon et al., "Identification and Determination of the Isomeric Bromo-and/or Chloro-Substituted 1,3-Dihalo-5,5-Dimethylhydantoins Used in Disinfectants and Molluscicides", Journal of AOAC International, Vol 79, No. 4, 1996, pgs 823-828.	
	L-133	Bromicide Microbiocide, A Safer Approach to Water Management, Great Lakes Chemical Corporation Brochure, 1993, 3 pgs	
	L-134	Büchner, W., et al., Industrial Inorganic Chemistry, p. 180 (1989)	
	L-135	Chemical Engineers Handbook, John H. Perry editor, Fourth Edition, McGraw-Hill Book Company, 1963, pgs 8-59 - 8-64	
	L-136	Cotton, F.A., et al., Advanced Inorganic Chemistry, Sixth Edition, p. 566 (1999)	
	L-137	Frost, A.A., et al., Kinetics and Mechanism: A Study of Homogeneous Chemical Reactions, p. 23 (1953)	
	L-138	Goncharuk, E.I., et al., "Toxicological-Hygienic Evaluation of a New Bactericidal Preparation, Dibromodimethylhydantoin (**Dibromantine**) used for Water Disinfection in Swimming Pools", Gig. Sanit. (1971), 36(5), ppg 96-99.	X
	L-139	Harp, Daniel L., Current Technology of Chlorine Analysis for Water and Wastewater, Technical Info Series, Booklet No. 17, 2002, 34 pgs.	
	L-140	Kristoffersen, T. and I.A. Gould, "Effect of Sodium Bromide on the Bactericidal Effectiveness of Hypochlorite Sanitizers of High Alkalinity," Journal of Dairy Science (1958) 41: 950-955.	
	L-141	Kruse, C.W., et al., "Halogen Action on Bacteria, Viruses, and Protozoa," in Proc. Natl. Specialty Conference on Disinfection, pp113-136 (New York, NY: ASCE, 1970).	
	L-142	Krycer et al., "An Evaluation of Tablet Binding Agents Part II. Pressure Binders", Powder Technology, 1983, Vol. 34, ppg. 53-56.	
	L-143	Kuechler, T.C., "A Towerbrom® Progress Report, (McLean, VA: Association of Water Technologies, 1993), ppg 1-15.	
	L-144	Kuechler, T.C., et al., "Development of Monsanto's Towerbrom® Microbiocide, a New Bromine Microbiocide for Recirculating Water Systems," (McLean, VA: Association of Water Technologies, 1991), 1991 AWT Conference, pg 1-23	
	L-145	Larson, D.S. et al., "Improved Microbiological Control Using Halogen Donors in a Pasteurizer," MBAA Technical Quarterly (1993) 30: 173-178.	
<i>mc</i>	L-146	Legionellosis: Guidelines for Control of Legionnaires' Disease," (Melbourne, Australia: Health Department Victoria, 1989, (reprinted in 1999), 9 pages.	
Examiner Signature	<i>Arthur L. Corbin</i>		Date Considered
			<i>8-21-06</i>

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/603,132
		Filing Date	June 24, 2003
		First Named Inventor	James L. McNaughton
		Art Unit	1761
		Examiner Name	Arthur L. Corbin
		Attorney Docket Number	SU-7273
Sheet	4	of	6

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>sc</i>	L-147	"Legionellosis Guideline: Best Practices for Control of Legionella," (Houston, TX: Cooling Tower Institute, February 2000), 8 pages.	
	L-148	Lewin, M. and M. Avarahami, "The Decomposition of Hypochlorite-Hypobromite Mixtures in the pH Range 7-10," Journal of the American Chemical Society, (1955) 77: 4491-4498.	
	L-149	Ludyanskiy, M.L. and F.J. Himpler, "The Effect of Halogenated Hydantoin on Biofilms," paper 405 (Corrosion 97, Houston, TX: NACE International, 1997), pp 405/1 - 405/11.	
	L-150	MaCalady et al., "Sunlight-Induced Bromate Formation in Chlorinated Seawater", Science, 1977, vol. 195, pp 1335-1337.	
	L-151	McCall, E., J.E. Stout, V.L. Yu, and R. Vidic, "Efficacy of Biocides against Biofilm-Associated Legionella in a Model System," paper IWC 99-19 (Pittsburgh, PA: Engineers' Society of Western Pennsylvania, 1999), 7 pages.	
	L-152	McCarthy, J.A., "Bromide & Chlorine Dioxide As Water Disinfectants"; Journal of the New England Water Works Association (1944) 58: 55-68.	
	L-153	McCoy, W.F., et al., "Strategies Used in Nature for Microbial Fouling Control: Application for Industrial Water Treatment," paper 520 (Houston, TX: NACE International, 1998).	
	L-154	McNamee, L., "Efficacy of Hypochlorite vs. Hypobromite in the Removal of a <i>Pseudomonas aeruginosa</i> Biofilm," summer intern report (Bozeman, MT: Montana State University, Center for Biofilm Engineering, 2000). pp 1-23.	
	L-155	Merck Index, 10 th Edition, pg 7581	
	L-156	Miki, W., K. Kon-ya, and S. Mizobuchi, "Biofouling and Marine Biotechnology: New Antifoulants from Marine Invertebrates," Journal of Marine Biotechnology (1996) 4: 117-120.	
	L-157	Mills, J.F., "Interhalogens and Halogen Mixtures as Disinfectants," in Disinfection-Water and Wastewater, J.D. Johnson, ed., pp 113-143 (Ann Arbor, MI: Ann Arbor Science, 1975).	
	L-158	"Minimizing the Risk of Legionellosis Associated with Building Water Systems," ASHRAE Guideline 12-2000 (Atlanta, GA: ASHRAE, 2000), 19 pages.	
	L-159	Moore, R.M., et al., "Use of a New Bromine-based Biocide in a Medium-Size Cooling Tower," paper IWC-97-51 (Pittsburgh, PA: Engineers' Society of Western Pennsylvania, 1997), 6 pages.	
	L-160	Moore, R.M., W.C. Lotz, and V.R. Perry, "Activated Sodium Bromide-Artificial Marsh Treatment: A Successful Plant-Wide Program," paper IWC-95-61 (Pittsburgh, PA: Engineers' Society of Western Pennsylvania, 1995). 12 pgs.	
<i>✓</i>	L-161	Nalepa, C.J., J.N. Howarth, and R.M. Moore, "A New Single-Feed Liquid Bromine Biocide for Treatment of Cooling Water," Presented at the AWT 1999 Annual Conference, (McLean, VA: Association of Water Technologies, 1999), 17 pages.	
<i>sc</i>	L-162	Nalepa, C.J., H. Ceri, and C.A. Stremick, "A Novel Technique for Evaluating the Activity of Biocides Against Biofilm Bacteria," paper 00347 (Corrosion 2000, Houston, TX: NACE International, 2000), pp 00347/1 - 00347/19.	
Examiner Signature	ARTHUR L. CORBIN		Date Considered 8-21-06

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/603,132
				Filing Date	June 24, 2003
				First Named Inventor	James L. McNaughton
				Art Unit	1761
				Examiner Name	Arthur L. Corbin
Sheet	5	of	6	Attorney Docket Number	SU-7273

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	L-163	Nalepa, C.J., et al., "Case Study: Minimization of Corrosion Using Activated Sodium Bromide in a Medium-Size Cooling Tower," paper 485 (Corrosion 96 NACE International Annual Conference and Exposition, Houston, TX: Nace International, 1996), 485/1 - 485/485/12.	
	L-164	Nalepa, C.J., et al., "The Activity of Oxidizing Biocides towards Legionella pneumophila and the Impact of Biofilms on its Control," paper 01278 (Houston, TX: NACE International, 2001, 21 pages.	
	L-165	Nalepa, C.J., et al., "Case Study: A Comparison of Bromine-Based Biocides in a Medium-Size Cooling Tower," paper TP98-09 (Houston, TX: Cooling Tower Institute, 1998), 22 pages.	
	L-166	Nalepa, C.J., J.N. Howarth, and F.D. Azarnia, "Factors to Consider When Applying Oxidizing Biocides in the Field," paper 02223 (Houston, TX: NACE International, 2002), 20 pages.	
	L-167	Nelson, G.D. "Chloramines and Bromamines," in Kirk Othmer Encyclopedia of Chemical Technology, Vol. 5, pp 565-580 (New York, NY: John Wiley and Sons, 1979).	
	L-168	Palin, A.T., "The Determination of Free and Combined Chlorine in Water by the Use of Diethyl-p-phenylene diamine," Journal of the American Water Works Association (1957) 49: 873-880.	
	L-169	Peterson, J.C., "Practical Air Washer Treatment in Synthetic Fiber Manufacturing Plants," paper IWC-87-39 (Pittsburgh, PA: Engineers' Society of Western Pennsylvania, 1987), pgs 366-370	
	L-170	Ren, D., J.J. Sims, and T.K. Wood, "Inhibition of Biofilm Formation and Swarming of <i>Bacillus subtilis</i> by (5Z)-4-Bromo-5-(Bromomethylene)-3-Butyl-2(5H)-Furanone," Letters in Applied Microbiology (2002) 34: 293-299.	
	L-171	Regulatory Advisory, Waterborne Pathogens - Compliance with Joint Commission on Accreditation of Healthcare Organizations Requirements, web address www.ashe.org/media/water.html , visited 6/12/2002, 9 pages.	
	L-172	Rideal, E.K. and U.R. Evans, "The Effect of Alkalinity on the Use of Hypochlorites," Journal of the Society of the Chemical Industry (1921) 40: 64R-66R	
	L-173	Rzepa, H.S., "Elemental and Molecular Heritage: An Internet-Based Display," Molecules (1998) 3: 94-99.	
	L-174	Shilov, E.A. and J.N. Gladchikova, "On the Calculation of the Dissociation Constants of Hypohalogenous Acids from Kinetic Data," Journal of the American Chemical Society (1938) 60: 490-491.	
	L-175	Smith, A., et al., "Bromine vs. Gaseous Chlorine: A Comprehensive Review of Case Histories," paper 637 (Corrosion 93, NACE Annual Conference and Corrosion Show, 1993), ppg 637/1 - 637/12.	
	L-176	Sook, B.R., T.F. Ling, and A.D. Harrison "A New Thixotropic Form of Bromochlorodimethylhydantoin: A Case Study," paper 03715 (Corrosion 2003, Houston, TX: NACE International, 2003), ppg 1-16.	
	L-177	Spurrell, C. and J.S. Clavin, "Solid Halogen Donor Economically Answers the Challenge of SARA Title III and Corrosion Concerns," paper 474 (Corrosion 93, NACE Annual Conference and Corrosion Show, 1993), ppg 474/1 - 474/15.	
	L-178	Sullivan, P.J. and B.J. Hepburn, "The Evolution of Phosphonate Technology for Corrosion Inhibition," paper 496 (Houston, TX: NACE International, 1995), ppg 496/1 - 496/13.	

Examiner Signature	ARTHUR L. CORBIN	Date Considered	8-21-06
--------------------	------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

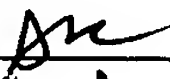



¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/603,132
		Filing Date	June 24, 2003
		First Named Inventor	James L. McNaughton
		Group Art Unit	1761
		Examiner Name	Arthur L. Corbin
		Attorney Docket Number	SU-7273
Sheet	6	of	6

OTHER PRIOR ART - NON-PATENT LITERATURE DOCUMENTS

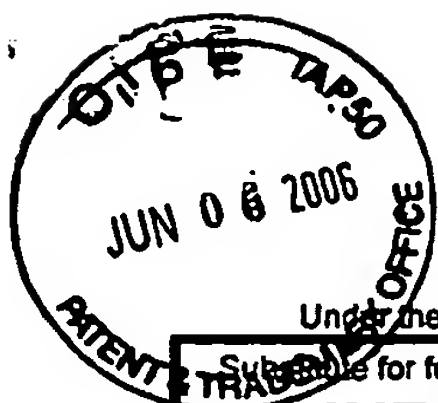
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
   	L-179	Sweeney, P., M. Ludensky, and O. Barokhov, "Mill Performance of a Brominated Methylethylhydantoin Slimicide," pp 437-447, Proceedings of the 1999 TAPPI Papermakers Conference (Norcross, GA: TAPPI, 1999).	
	L-180	Tanner, F.W. and G. Pitner, "Germicidal Action of Bromine," Proceedings of the Society for Experimental Biology and Medicine (1939) 40: 143-145.	
	L-181	Thomas, W.M., J. Eccles, and C. Fricker, "Laboratory Observations of Biocide Efficiency against Legionella in Model Cooling Tower Systems," paper SE-99-3-4 (Atlanta, GA: ASHRAE Transactions, 1999), ppg 1-17.	
	L-182	Tsukamoto, S. et al., "Ceratinamides A and B: New Antifouling Dibromotyrosine Derivatives from the Marine Sponge <i>Pseudoceratina purpurea</i> ," Tetrahedron (1996) 52: 8181-8186.	
	L-183	Vanderpool, D., M. Killoran, and R. Sargent, "Improving the Corrosion Inhibitor Efficiency of Tolyltriazole in the Presence of Chlorine and Bromine," paper 157 (Corrosion 87, San Francisco, CA , 1987), ppg 157/1-157/9.	
	L-184	Wackenhuth, E.C. and G. Levine, "An Investigation of Bromine Chloride as a Biocide in Condenser Water," (Pittsburgh, PA: Engineer's Society of Western Pennsylvania, 1974), pgs 1-14..	
	L-185	Weeks, M.E., "Discovery of the Elements: XVII. The Halogen Family," Journal of Chemical Education (1932) 9: 1915-1938.	
	L-186	Wood, D.R. and E.T. Illing, Analyst (1930), Royal Society of Chemistry, The Analyst, 55: 126-127.	
	L-187	Wyss, O. and R.J. Stockton, "The Germicidal Action of Bromine," Arch. Biochem. (1947) 12:267-271.	
	L-188	Yaron, F., "Bromine Manufacture: Technology and Economic Aspects," in "Bromine and Its Compounds," Z.E. Jolles, ed., pp 3-12 (New York, NY: Academic Press, 1966).	
	L-189	Yu, F.P., et al., "Cooling Tower Fill Fouling Control in a Geothermal Power Plant," paper 529 (Corrosion 98, Houston, TX: NACE International, 1998), pg 529/1 - 529-11.	
	L-190	Yu, F.P., et al., "Innovations in Fill Fouling Control," IWC-00-03 (Pittsburgh, PA: Engineers' Society of Western Pennsylvania, 2000), ppg 26-31.	
L-191	Zhang, Z. and J.V. Matson, "Organic Halogen Stabilizers: Mechanisms and Disinfection Efficiencies," paper TP89-05 (Houston, TX: Cooling Tower Institute, 1989), pgs 1-19.		
L-192	Zhang, Z. "Disinfection Efficiency and Mechanisms of 1-Bromo-3-Chloro-5,5-Dimethylhydantoin," Doctoral Dissertation, University of Houston, May 1988, ppg 160, 162, 163.		

Examiner Signature	ARTHUR L. CORBIN	Date Considered	8-21-06
--------------------	------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



PTO/SB/08A (07-05)

Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Complete If Known

Application Number	10/603,132
Filing Date	June 24, 2003
First Named Inventor	James L. McNaughton
Group Art Unit	1761
Examiner Name	Arthur L. Corbin
Attorney Docket Number	SU-7273

Sheet 1 of 5

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
m	US-230	US-1995639	03-26-1935	Henderson	
	US-231	US-2443429	06-15-1948	Marks	
	US-232	US-2662855	09-07-1950	Kamlett	
	US-233	US-2815311	12-03-1957	Ellis, et al.	
	US-234	US-3519569	07-07-1970	Diaz	
	US-235	US-3850833	11-26-1974	Kocelch, et al.	
	US-236	US-3958020	05-18-1976	DeVries et al.	
	US-237	US-3961086	01-06-1976	Turbak et al.	
	US-238	US-4199602	04-22-1980	Lentsch	
	US-239	US-4235599	11-25-1980	Davis, et al.	
	US-240	US-4250910	02-17-1981	King	
	US-241	US-4258056	03-24-1981	Lentsch	
	US-242	US-4297224	10-27-1981	Macchiarolo, et al.	
	US-243	US-4362753	12-07-1982	Barta	
	US-244	US-4376787	03-15-1983	Lentsch et al.	
	US-245	US-4420394	12-13-1983	Lewis	
	US-246	US-4469848	09-04-1984	Hooper et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
m	FP-42	WO-8103110	11/12/1981	Barta		

Examiner Signature	Arthur L. Corbin	Date Considered	8-21-06
-----------------------	------------------	--------------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of US PTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Substitute for form 1448/PTO

(use as many sheets as necessary)

Application Number	10/603,132
Filing Date	June 24, 2003
First Named Inventor	James L. McNaughton
Group Art Unit	1761
Examiner Name	Arthur L. Corbin
Attorney Docket Number	SU-7273

Sheet	2	of	5
-------	---	----	---

[illegible][illegible]

Examiner Signature	ARTHUR L. COBIN	Date Considered	8-21-06
-----------------------	-----------------	--------------------	---------

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/603,132		
		Filing Date	June 24, 2003		
		First Named Inventor	James L. McNaughton		
		Art Unit	1761		
		Examiner Name	Arthur L. Corbin		
Sheet	3	of	5	Attorney Docket Number	SU-7273

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
AC	L-93	Albright, J.C., "Liquid Bromine Removes Obstinate Algae from 10,000 Gallon Tower for \$2.10 a Day," Petroleum Processing (1948) 3: 421-422.	
	L-94	Aull, R. and T. Krell, "Design Features and their Affect on High Performance Fill," paper TP00-01 (Houston, TX: Cooling Technology Institute, 2000), ppg 1-31.	
	L-95	"AWT Legionella 2003 - An Update and Statement by the Association of Water Technologies (AWT)" (McLean, VA: Association of Water Technologies, 2003). ppg 1-33.	
	L-96	Balard, A.J., Annales de Chemie et de Physique (1826), vol 32, ppg 371-372.	
	L-97	Barratt, S. and C.P. Stein, "On Bromine Chloride," Proceedings of the Royal Society (London) (1929) vol 122: 582-588.	
	L-98	Bartholomew, R.W., "Bromine-based Biocides for Cooling Water Systems: A Literature Review," Paper IWC 98-74 (Pittsburgh, PA: Engineers' Society of Western Pennsylvania, 1998), 30 pages.	
	L-99	Beckwith, T.D. and J.R. Moser, Journal of the American Water Works Association (1933) 25: 367-374.	
	L-100	Bongers, L.H., T.P. O'Connor and D.T. Burton, "Bromine Chloride - An Alternative to Chlorine for Fouling Control in Condenser Cooling Systems," report no. EPA-600/7-77-053 (Research Triangle Park, NC: EPA Office of Research and Development, May 1977), 5 pages.	
	L-101	"Bromine Brine," Arkansas Geological Commission, web address www.state.ar.us/agc/bromine.htm ; 1 page.	
	L-102	Brungs, W.A., "Effects of Residual Chlorine on Aquatic Life," Journal of the Water Pollution Control Federation (1973) 45: 2180-2193.	
	L-103	Characklis, W.G. and K.C. Marshall, ed., Biofilms: A Basis for an Interdisciplinary Approach, (New York, NY: John Wiley & Sons, 1987), pg 3-5.	
	L-104	Clare, A.S., "Marine Natural Product Antifoulants: Status and Potential," Biofouling (1996) 9: 211-229.	
	L-105	Conley, J.C., E.H. Puzig, and J.E. Alleman, "Bromine Chemistry - An Alternative to Dechlorination in Cooling Water and Wastewater Disinfection," IWC-87-42 (Pittsburgh, PA: Engineers' Society of Western Pennsylvania, 1987), ppg 389-395.	
	L-106	"Control of Legionella in Cooling Towers: Summary Guidelines," (Madison, WI: Wisconsin Division of Health, August 1987), 45 pages.	
	L-107	Costerton, J.W. and P.S. Stewart, "Battling Biofilms," Scientific American (July 2001) 285: 74-81.	
	L-108	Dychala, G.R., "Chlorine and Chlorine Compounds" in Disinfection, Sterilization, and Preservation 4 th Ed., S.S. Block, ed., pp. 137-138 and 149-15, (Philadelphia, PA, Lea & Febiger, 1991).	
AC	L-109	Elsmore, R., "Development of Bromine Chemistry in Controlling Microbial Growth in Water Systems," International Biodeterioration and Biodegradation (1994) 245-253.	

Examiner Signature	Arthur L. Corbin	Date Considered	8-21-06
--------------------	------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	10/603,132
				Filing Date	June 24, 2003
				First Named Inventor	James L. McNaughton
				Art Unit	1761
				Examiner Name	Arthur L. Corbin
				Attorney Docket Number	SU-7273
Sheet	4	of	5		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>mc</i>	L-110	Enzien, M. and B. Yang, "On-line Performance Monitoring of Treatment Programs for MIC Control," paper 01279 (Corrosion 2001, Houston, TX: NACE International, 2001), 13 pages.	
	L-111	"Evolution of Industrial Water Treatment," Betz Handbook of Industrial Water Conditioning, Seventh Edition, pp 7-15 (Trevose, PA: Betz Laboratories, Inc., 1976).	
	L-112	Fair, G.M., et al., "The Behavior of Chlorine as a Water Disinfectant," Journal of the American Water Works Association (1948) 40: 1051-1061.	
	L-113	Farkas-Himsley, H., "Killing of Chlorine-Resistant Bacteria by Chlorine-Bromine Solutions," Applied Microbiology (1964) 12: 1-6.	
	L-114	Freije, M.R., "Legionellae Control in Health Care Facilities: A Guide for Minimizing Risk," (Indianapolis, IN: HC Information Resources, Inc., 1996, ppg 25-41.	
	L-115	Genthe, H. "The Incredible Sponge," Smithsonian (August 1998) 29: 50-58.	
	L-116	Gillam, A.E. and R.A. Morton, "The Absorption Spectra of Halogens and Inter-Halogen Compounds in Solution in Carbon Tetrachloride," Proceedings of the Royal Society (London) (1929) vol 124: 604-616.	
	L-117	Givskov, M. et al., "Eukaryotic Interference with Homoserine Lactone-Mediated Prokaryotic Signaling," Journal of Bacteriology (1996) 178: 6618-6622.	
	L-118	Grinbaum, B. and M. Friedman, "Bromine," in Kirk-Othmer Encyclopedia of Chemical Technology 4 th Ed. (New York, NY: John Wiley and Sons, Inc., 2001), vol 4, ppg 548-549.	
	L-119	Houghton, G.U., "Bromine Content of Underground Waters. II. Observations on the Chlorination of Water Containing Free Ammonia and Naturally Occurring Bromide," Journal of the Society of the Chemical Industry (1946) 65: 324-328	
	L-120	Himpler, F. J., P.G. Sweeney, and M.L. Ludensky, "The Benefits of a Hydantoin-Based Slimicide in Papermaking Applications," APPITA Journal (September 2001) 54: 427-430.	
	L-121	Howarth et al., "First Field Trials of Single-Feed, Liquid Bromine Biocide For Cooling Towers", Paper TP00-09 (Houston, Tx.: Cooling Technology Institute, Jan. 31-Feb 2, 2000), 17 pages	
	L-122	Johannesson, J.K., "The Bromination of Swimming Pools," American Journal of Public Health (1960) 50: 1731-1736.	
	L-123	Johannesson, J.K., "Anomalous Bactericidal Action of Bromamine," Nature (1958) 181: 1799-1780.	
	L-124	Johns, C.K., "Germicidal Power of Sodium Hypochlorite," Industrial and Engineering Chemistry (1934) 26: 787-788.	
	L-125	Johnson, J.D. and W. Sun, "Bromine Disinfection of Wastewater," in "Disinfection-Water and Wastewater," J.D. Johnson, ed., pp 179-191 (Ann Arbor, MI: Ann Arbor Science, 1975).	
<i>mc</i>	L-126	Kabler, P.W., "Relative Resistance of Coliform Organisms and Enteric Pathogens in the Disinfection of Water with Chlorine," J. American Water Works Association (1951) 43: 553-560.	

Examiner Signature	<i>ARTHUR L CORBIN</i>	Date Considered	<i>8-21-06</i>
--------------------	------------------------	-----------------	----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	10/603,132
				Filing Date	June 24, 2003
				First Named Inventor	James L. McNaughton
				Art Unit	1761
				Examiner Name	Arthur L. Corbin
				Attorney Docket Number	SU-7273
Sheet	5	of	5		

[illegible]

Examiner Signature	ARTHUR L. CORBIN	Date Considered	8-21-06
-----------------------	------------------	--------------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S., P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.